



Green Building Code Requirements For Residential Construction

County of Orange



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In order to facilitate sustainable construction practices, all projects must comply with the State of California Green Building Standards Code (CGBSC) at both the design and construction phases of development. Before preparing plans for submittal, please be aware of the following information.

Indoor Water Use – CGBSC 4.303

1. Indoor water fixtures must incorporate the fixture flow rates of table 4.303.2

| Fixture Type | Flow Rate |
|-------------------------|------------------|
| Lavatory faucets | 1.5 gpm@80 psi |
| Kitchen faucets | 1.8 gpm @ 80 psi |
| Water Closets (toilets) | 1.28 gpm @80 psi |
| Showerheads | 2 gpm @ 80 psi |

Outdoor Water Use - CGBSC 4.304.1

1. Irrigation controllers must be weather (rain sensor) or soil moisture based controllers.

Construction Waste Reduction – CGBSC 4.408

1. A construction waste management plan shall be submitted at plan check and comply with the Orange County Mandatory Construction and Demolition Recycling Policy and Program.

Building Maintenance and Operation – CGBSC 4.410

1. At final inspection documentation on building maintenance and operation must be provided.
 - 1.1 Operation and maintenance instructions for all equipment and appliances.
 - 1.2 Roof and yard drainage including gutters and downspouts.
 - 1.3 Space conditioning systems including condensers and air filters.
 - 1.4 Landscape and irrigation systems.
 - 1.5 Water reuse systems.
 - 1.6 Recycle programs and locations.
 - 1.7 Public transportation and carpool options.
 - 1.8 Educational material on the positive impacts of maintaining indoor relative humidity between 30 and 60 percent.
 - 1.9 Information about water conserving landscape and irrigation design.
 - 1.10 Importance of gutters and downspouts and diverting water at least 5 ft. from buildings.

- 1.11 Information on routine maintenance such as caulking, painting, grading, etc.
- 1.12 Information about state solar energy and incentive programs.
- 1.13 A copy of all special inspection verifications required by the enforcing agency.

Fireplaces – CGBSC 4.503

1. Fireplaces must be of the direct-vent sealed-combustion chamber type.

Pollution Control – CGBSC 4.504

1. All duct and related distribution component openings must be covered with tape or other approved means to prevent dust accumulation.
2. Adhesives, sealants, and caulks must meet minimum VOC limits (see VOC Limits Handout).
3. Paints and coatings must meet minimum VOC limits (see VOC Limits Handout).
4. Aerosol Paints and coatings shall meet the Product-Weighted MIR Limits for ROC in Section 94522(a)(3) and other requirements, including prohibitions on use of certain toxic compounds and ozone depleting substances, in Sections 94522(c)(2) and (d)(2) of California Code of Regulations, Title 17, commencing with Section 94520.
5. All carpet installed in the building interior shall meet the testing and product requirements of one of the following:
6. Carpet and Rug Institute's Green Label Plus Program.
7. California Department of Public Health Standard Practice for the testing of VOCs (Specification 01350).
8. NSF/ANSI 140 at the Gold Level.
9. Scientific Certifications Systems Indoor Advantage Gold.
10. All carpet cushion installed in the building interior shall meet the requirements of the Carpet and Rug Institute Green Label program.
11. All carpet adhesive shall meet minimum VOC limits (see VOC Limits Handout).
12. Where resilient flooring is installed, at least 50 percent of floor area receiving resilient flooring shall comply with the VOC emission limits defined in Collaborative for High Performance Schools (CHPS) Low-emitting Materials List or certified under the Resilient Floor Covering Institute (RCFI) Floor Score program.
13. Hardwood plywood, particleboard and medium density fiberboard composite wood products used on the interior or exterior of the building shall meet the requirements for formaldehyde as specified in ARB's Air Toxics Control Measure for Composite Wood (17 CCR 93120 et seq.), by or before the dates specified in those sections, as shown in Table 4.504.5

FORMALDEHYDE LIMITS IN PARTS PER MILLION

| Product | Current Limit | January 1, 2012 | July 1, 2012 |
|------------------------------|----------------------|------------------------|---------------------|
| Hardwood ply veneer core | .05 | | |
| Hardwood ply composite core | .08 | | .05 |
| Particleboard | .09 | | |
| Medium Density Fiberboard | .11 | | |
| Thin med. density fiberboard | .21 | .13 | |

14. Documentation for the items listed above must be made available to your inspector upon request.

Interior Moisture Control – CGBSC 4.505

1. A capillary break shall be installed and shall consist of the following: a 4-inch thick base of ½ inch or larger clean aggregate shall be provided with a vapor barrier in direct contact with concrete and a concrete mix design, which will address bleeding, shrinkage, and curling, shall be used. For additional information, see American Concrete Institute ACI 302.2R-06. An equivalent slab design by a design professional is acceptable.

Moisture Content of Building Materials – CGBSC 4.505.3

1. Building materials with visible signs of water damage shall not be installed.
2. Wall and floor framing shall not be enclosed when the framing members exceed 19 percent moisture content.
3. Moisture content shall be verified in compliance with the following:
 - 3.1 Moisture content shall be determined with either a probe-type or contact-type moisture meter.
 - 3.2 Moisture readings shall be taken at a point 2 feet to 4 feet from the grade stamped end of each piece to be verified.
 - 3.3 At least three random moisture readings shall be performed on wall and floor framing with documentation provided immediately prior to enclosure of the wall and floor framing.
4. Insulation products which are visibly wet or have high moisture content shall be replaced or allowed to dry prior to enclosure in wall or floor cavities.
5. Wet- applied insulation products shall follow the manufacturers' drying recommendations prior to enclosure.

Indoor Air Quality and Exhaust – CGBSC 4.506

1. For bathrooms containing a bathtub, shower, or tub/shower combination, a mechanical exhaust fan which exhausts directly from the bathroom must be installed.
2. Fans must be ENERGY STAR compliant and be ducted to terminate outside the building.
3. Unless functioning as a component of a whole house ventilation system, fans must be controlled by a humidistat which shall be readily accessible.
 - 3.1 Humidistat controls shall be capable of adjustment between a relative humidity range of 50 to 80 percent.

Environmental Comfort – CGBSC 4.507

1. Whole house exhaust fans shall have insulated louvers or covers which close when the fan is off.
 - 1.1 Covers or louvers shall have a minimum insulation value of R-4.2.
2. Heating and air-conditioning systems shall be sized, designed and have their equipment selected using the following methods:
 - 2.1 The heat loss and heat gain is established according to ACCA Manual J, ASHRAE handbooks or other equivalent design software methods.
 - 2.2 Duct systems are sized according to ACCA 29-D Manual D, ASHRAE handbooks or other equivalent design software or methods.
 - 2.3 Select heating and cooling equipment according to ACCA 36-S Manual S or other equivalent design software or methods.
 - 2.4 Use of alternate design temperatures necessary to ensure the systems function are acceptable.